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Manner as a skeletal relation

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(1) background

a. tendency 1: in feature theory there is a palpable tendency for extracting features from feature matrices, i.e., segments

i. some features are done away with completely, their effects delegated to prosodic structures (the skeleton and above): e.g., stress, length, syllabicity etc.

ii. other features remain qua features and become autosegments, which may simultaneously belong to several segments: e.g., tone, voiced, palatality etc.; this has happened to most/all features

iii. interestingly, if a model keeps any features segmental (i.e., within the segment), it is the "manner" features (vocalicity, consonantalness, sonority, stridency, continuancy etc.) that are kept—these constitute (or are directly associated to) the root node (cf. Walli-Sagey 1986, Schein & Steriade 1986, McCarthy 1988)

b. tendency 2: the aim to reduce the number of primes in the theory to avoid overgeneration; in a theory with n primes the number of possible segments is 2^n; if formal notions like headedness or dependency is introduced the number raises significantly, to $(\frac{n}{2}+1)2^n$ in the case of unary primes and to $(n+1)2^n$ in the case of binary primes

(2) my aim

to take another step in direction (1ai) (or (1aiii), depending on how one looks at it) and (1b) by doing away with MANNER FEATURES charging the SKELETON with their function (this aim will not be fully accomplished)

a. why manner primes?

i. it is manner of articulation that is most intimately connected to consonantalness and vocalicness (*pace* Hulst 1994, who claims that all phonetic properties are such), which are quite clearly prosodic properties

ii. manner vs. place/laryngeality seem to pattern differently in lenition (cf. (4c))

iii. independent assimilation of manner (i.e., major class) features is rare, if it exists at all (cf., e.g., Schein & Steriade 1986 : 694, McCarthy 1988 : 91f, Harris 1996 : 310, Hume & Odden 1996 on [consonantal], Cser 1999 on [continuant])

b. why the skeleton?

i. the sonority/manner-wise lenition of segments is typically dependent on syllabic position, i.e., on skeletal relations affecting the host of the segment (cf. (6b))

ii. the fortition of segments (which is always a change in manner; assimilation is treated as lenition here, cf. (9b)) is also dependent on skeletal relations

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(3) similar previous proposals

a. Hulst (1994, 1995) proposes that all phonetic properties (including manner of articulation) could be modelled by two primes, C and V, entering in various dependency relations

b. Jensen (1994) proposes that stops and glides be distinguished by positing a virtual coda position before the former but not the latter, even when there is no such coda pronounced

c. Rennison (1997) proposes that the consonantalness of onsets and the vocalicness of nuclei could be channelled "into segments" by the empty element

(4) lenition (cf. fortition in (9))

a. is strongly theory-specific (cf. the categories given in (4bii)); in theories using monovalent primes it is generally assumed that lenition involves the loss of certain primes; whether a given change is interpreted as lenition depends then on what primes the analyst presupposes; here I have the following set in mind: **A**, **I**, **U**, **L**, **H**, **h**, **ʔ** (cf. Harris & Lindsey 1995 for a similar set) (note that these 7 primes yield 576 segments if a maximum of one may function as head)

b. types of lenition (further examples can be cited of one's favourite languages)

i. increasing sonority, but keeping place and laryngeal properties (if possible, i.e., not in the case of obstruent-to-sonorant changes):
e.g., t → s/ɾ, p/b → w, p → p͡f/f, g → ɣ

ii. loss of place of articulation

α. becoming glottal: e.g., t/k → ʔ, s/f → h

β. becoming coronal: e.g., ɲ → n, ʎ → l

γ. becoming velar(ized): e.g., n → ŋ, l → ɫ

iii. loss of laryngeal properties: d/tʰ/dʱ → t

c. sites of lenition (also cf. Ségéral & Scheer 1999 : 24): the three types of lenition can roughly be associated with two favoured environments (this is not to say that cases to the contrary never occur)

i. increase in sonority (cf. (4bi)) is typical intervocalically; let us call this type v(ocalic)-lenition, since it makes a consonant more vowel-like (sonorous) (cf. Cser (2001), who restricts lenition to changes in sonority, i.e., to v-lenition)

ii. loss of place and/or laryngeal properties (cf. (4bii) and (4biii)) is typical in nonprevocalic position; let us call this type c(onsonantic)-lenition, since it makes a consonant more like what can be taken to be the prototypical consonant, ʔ (no place, no laryngeal properties; this type of lenition is decomplexification—in the sense of Harris 1997—and has nothing to do with sonority hierarchies)

(5) sonority/segment strength

a. some representative (partial) hierarchies

i. Ladefoged 1993 : 246: a > æ > ɛ > ɪ > u > i > l > n > m > z > v > s > ʃ > d > t > k (for English)

ii. Anderson & Ewen 1987: voiceless stops, voiceless fricatives/voiced stops, voiced fricatives, nasals, liquids, vowels (universal)

iii. Zwicky 1972: stops > fricatives > ŋ > m > n > l > r > h > w > j > vowels (Lass 1984 : 183) (for English)

iv. Dogil 1988 : 93, 1992 : 330: vowels – semi-vowels/approximants – nasals – obstruents – laryngeals (universal)

v. Hume & Odden 1996 : 359: laryngeal < V/glide < liquid < nasal < fricative < stop (universal)

b. lessons

i. some authors attribute relevance to place in the hierarchy, cf. (5ai)

ii. some authors attribute relevance to laryngeal properties (voicing) in the hierarchy, cf. (5aii)

iii. those who include laryngeals (ʔ h) in their hierarchy at all may put them in the middle, (5aiii), to the bottom, (5aiv), or to the top, (5av), of the hierarchy

c. proposal

there is no one-dimensional "strength" hierarchy (cf. Lass 1984 : 178, for the same idea with different details), sonority is one dimension, place/laryngeal properties is another orthogonal dimension

(6) syllable structure (according to Dienes & Szigetvári 1999)

a. the skeleton is made up of strictly alternating V and C positions (cf. Lowenstamm 1996 and many subsequent analyses); this is a logical conclusion of the introduction of empty skeletal positions (Szigetvári 2001)

i. skeletal positions form inseparable couplets of a V position followed by a C position; it follows that phonological skeletons universally begin with a V and end in a C position (this view is fiercely debated by, e.g., Balogné Bérces (2002) and Scheer (2002); arguments for the claim are collected in Szigetvári 1999 : 90ff)

ii. the properies of V and C (cf. dependency phonology: Anderson & Ewen 1987, Hulst 1995 : 94):

α. Vness contributes loudness (i.e., maximum sonority) to the segment

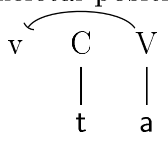
β. Cness contributes muteness (i.e., minimum sonority) to the segment (note that this does not fully agree with DP: Cness here does not contribute stricture/noise to a segment; but is compliant with Dogil's sonority hierarchy with ʔ—and h/ɦ—at the "bottom", (5aiv))

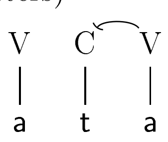
b. syllable structure is expressed by relations between skeletal positions; these relations are local (can affect only a position in an adjacent skeletal couplet; the nearest position of the required type), directional (are directed right-to-left)

i. government

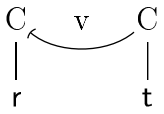
α. deteriorates the inherent property of its target: a governed V's loudness is decreased, a governed C's loudness (i.e., sonority) is increased; a governed V becomes mute, a governed C becomes louder, more sonorous

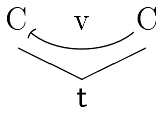
β. ungoverned V governs V if it is empty (= proper government), else C (empty skeletal positions are labelled in lowercase letters)





γ. C may govern C if intervening V is empty (= coda–onset cluster); this relation is stipulated in the lexicon (probably follows from the melodic makeup of the two Cs, but rules are not worked out)

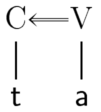


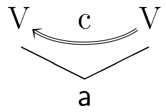


ii. licensing

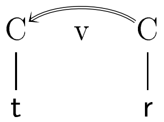
α. supports the sustenance of melodic material in its target (cf. Goldsmith 1990: 108, 123ff, Harris 1997, Ségéral & Scheer 1999)

β. ungoverned V licenses preceding C, or may license a preceding V if intervening C is empty (= long vowel or diphthong)





γ. C may license preceding C (= branching onset(?))



iii. all other relations are excluded by locality and directionality conditions defined in (6b), more specifically, C may not govern/license V because there is no C and V such that the C could "reach" the V locally and to the left: in [V_1 C_1][V_2 C_2][V_3 C_3] C_2 cannot reach

α. V_1 because it is not "the nearest position of the required type"

β. V_2 because it is not "in an adjacent skeletal couplet"

γ. V_3 because it is not to its left

(7) the sites of lenition in (4c) associated with the types of lenition in (4b) can be identified by the relations targeting them

a. c-lenition (cf. (4cii)) is expected in unlicensed C positions: non-prevocalically (i.e., word finally and preconsonantally; note that the only licensed non-prevocalic C position is the first member of a branching onset); if licensing "supports the sustenance of melodic material in its target" then being unlicensed a position is bound to lose melodic material; this means the loss of place or laryngeal properties, i.e., c-lenition

b. v-lenition (cf. (4ci)) is expected in governed C positions: intervocalically and in the coda-in-the-GP-sense position (i.e., the first of two skeletally, not superficially, adjacent consonants); if government "deteriorates the inherent property of its target" then being governed a C position is bound to lose it muteness and become more sonorous, i.e., undergo v-lenition

c. in the "true coda" position a consonant is expected to undergo both c-lenition (since it is not followed by a pronounced V that could license it) and v-lenition (since it is governed by the following C)

(8) v-lenition is thus not the result of the loss of melodic material, but of the detrimental effect of government, which makes the C more sonorous

a. if sonority (more spcifically continuancy) were coded by a melodic prime, it would be doubly coded and v-lenition would be regularly expected in ungoverned and unlicensed positions too (e.g., word-finally) (not that it is unheard of there)

b. CV phonology (all the way from Clements & Keyser 1983) has always encoded some sonority-related properties on the skeleton ([consonantal] or [syllabic])

c. if major class features, like continuancy, were marked, the unmarked consonants (e.g., stops) would turn out to be more marked than the marked ones (e.g., sonorants); this is necessary in standard GP (cf. Harris 1997) because lenition is seen only as loss of melodic primes

(9) fortition

a. if lenition is viewed as above, fortition is only possible as a counterforce of v-lenition, not as a counterforce of c-lenition: there is no source for adding place or laryngeal features

b. assimilation is not fortition: the target of assimilation undergoes lenition (losing its independent phonetic properties) and comes to be under the control of the trigger of assimilation, which extends the domain of interpretation of its own properties over the target; thus the assimilated segment per se undergoes lenition, its "fortition" is only apparent

(10) if C means muteness, then C=**ʔ**, continuant consonants occur in governed positions

a. advantages

i. we get a nonstipulative explanation of why Vs are incompatible with [−continuant]

ii. we get a nonstipulative explanation of why languages with the meagrest sets of consonants possess stops (and nasals), but not fricatives, liquids or glides (i.e., why stops are *the* consonants)

b. predictions

i. if "skeletal slots" also function as melodic units, then the OCP is expected to constrain them: this necessitates strictly alternating V and C slots

ii. in the simplest case a language should have paʋa (with the difference between the two consonants being noncontrastive), more complex systems should have also papa and ʋaʋa, even more complex systems ʋapa

α. Axininca Campa (Hume & Odden 1996 : 361)

kanari	no-janari-ti	'wild turkey∼1sg.poss.'
paʧʰaka	no-β̞aʧʰaka-ti	'gourd∼1sg.poss.'

β. Negidal (Hume & Odden 1996 : 362)

koto-β̞un	'my knife'
jepkit-pun	'my food'
kotol-bun	'my knives'

γ. geminate, postnasal and word-initial approximants and voiced fricatives often strengthen (e.g., Proto-Germanic ββ/ðð/ɣɣ > bb/dd/gg, mβ/nð/nɣ > mb/nd/ng,

#β/ð > #b/d Cser 1996 : 2, Romance jj > ʤʤ); reason: they (or their second members) are ungoverned (Seigneur-Froli (2002, footnote 3) promises to talk about the divergent behaviour of post-obstruent (and post-nasal) vs. post-(nonnasal)sonorant positions)

δ. a learner of Hungarian as a first language aged 2,6

STANDARD	LEARNER	GLOSS
ʒoːfi	ʤoːfi	a name
jutkɑ	ɟukːɑ	a name
buɟi	buji	'knickers'
fyci	fyji	'willy'
ɑɲu	ɑju	'mummy'
ɑpɑ	ɑfɑ	'dad'
buboː	buvoː	a cartoon character
ɑɲɟɑl	ɑɲɟɑl, *ɑɲjɑl	'angel'

these are simple cases of fortition and lenition, but where does the **ʔ** come from in case of fortition? answer: it was always there as C

c. disadvantage

as yet I have feeble ideas of why noncontinuant consonants can occur in governed position and continuants in ungoverned position

(11) noise (**h**) is not a property of C (but it is also incompatible with vowels)

a. stops are noisy only if licensed, i.e., followed by a pronounced V; if being unlicensed results in the loss of noise then noise is an autosegmental property

b. however, it is worth considering whether the noisiness/noiselessness of stops should be coded in the representation, given that this contrast is not utilized in languages

c. Porteño Spanish has fricatives in place of glides prevocalically (Hume & Odden 1996 : 369)

PORTEÑO/STD	STANDARD	PORTEÑO	GLOSS
lej	lejes	leʒes	'law sg.~pl.'
ir	jendo	ʒendo	'go~going'
orfanato	werfano	ɣʷerfano	'orphanage~orphan'

d. Hungarian, however, shows the opposite

FRICATIVE	APPROXIMANT	GLOSS
ʃaːv	ʃaːʋot	'stripe nom.~acc.'
vlaɟimir		a name
	ʋiːz	'water'
ʦeːx	ʦeːhɛ/ʦeːɦɛ	'guild~3sg.poss.'
ʃɑx		'shah'
xrabal		Czech writer
doxnaːɲi		Hungarian composer
	hɑb	'foam'
lopç	lopjon	'steal 2sg.~3sg. imp.'
dobʝ	dobjon	'throw 2sg.~3sg. imp.'
	bɑj	'trouble'

e. if voicing is distinctive only for obstruents, and nasality only for nonobstruents (*pace* nasal fricatives), i.e., voicing and nasality are in complementary distribution, the same prime can be used to code both (**L**; cf. Neubarth & Rennison 1998), linked to **h** in obstruents and not in sonorants (cf. Szigetvári 1998 : 291); this needs the retention of **h**

f. it is worth contemplating if **h** and **H** are related/identical (cf. Neubarth & Rennison 1998, Starčević 2001 : 48ff); note that **H** (aspiration and h) also prefer to be in licensed position (in English only before stressed vowels and word initially); (post)aspiration cannot be expressed if not followed by a vowel or sonorant consonant

(12) a further repercussion: if C=**ʔ**, then V=**A**

a. fortunate consequences

i. single-vowel systems must contain ɑ

ii. **A** must be incompatible with C: the interpretation of **A** is not obvious as a consonantal place

b. unfortunate(?) consequences

i. **A** ought not to spread, no **A** harmony

ii. empty V ought to be pronounced ɑ

(13) conclusions

a. **ʔ** (noncontinuancy) should be expelled from phonological representations, its role being taken over by the ungoverned C position of the skeleton (alternatively, we may say that the skeleton contains **ʔ**s instead of Cs: **ʔ** is not an autosegment but the root node (of consonants) itself)

b. **h** (obstruency/noise) apparently cannot be done away with; in a sense it is a vocalic property of consonants to be noisy (given that their prototypical property is muteness), yet **h** seems to be incompatible with V

c. consonant lenition is of two types: sonority-increasing (v-lenition) and place/laryngeal-losing (c-lenition); only v-lenition is reversible (fortition), gaining place/laryngeal properties is only possible through assimilation

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